



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/673,381

09/26/2003

Bharat T. Doshi

Doshi 56-5-21-17-33

8412

46850

7590

02/04/2009

MENDELSON & ASSOCIATES, P.C.

1500 JOHN F. KENNEDY BLVD., SUITE 405

PHILADELPHIA, PA 19102

EXAMINER

CLOUD, JOIYA M

ART UNIT

PAPER NUMBER

2444

MAIL DATE

DELIVERY MODE

02/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/673,381	Applicant(s) DOSHI ET AL.	
	Examiner Joiya M. Cloud	Art Unit 2444	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/26/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/04/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the communication filed 11/014/2008. Claims 1-23 are PENDING. Applicant's arguments have been considered, but are moot in view of new grounds of rejection.

IDS

Examiner acknowledges IDS submitted 11/04/2008.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-6** are rejected under 35 U.S.C. 102(e) as being anticipated by Huang et al. (**US Publication No. US 2003/0117950**).

As per claim 1, Huang teaches comprising: representing, in a network data structure, information associated with a mesh network having a plurality of nodes interconnected by a plurality of links, wherein the network data structure comprises, for each link in the network and each node or other link in the network, a representation of a minimum amount of protection bandwidth required to be reserved on said each link to restore service upon failure of said each node or other link (**paragraph [0040] and Figure 1**); receiving a request for a new service in the network, wherein the new service is represented by a service data structure comprising an identification of each link and transit node in a primary path for the new service (**paragraphs [0030], [0036], [0041] and [0043]**); determining, using the network and service data structures, whether the new service requires additional protection bandwidth to be reserved on any link in the network (**paragraphs [0045] and [0046]**); and updating the network data structure if any additional protection bandwidth is determined to be required for the new service (**paragraphs [0033] and [0034]**).

As per claim 2, Huang teaches wherein the service data structure further comprises an identification of bandwidth associated with the new service (**col. 5, lines 38-40**).

As per claim 3, Huang teaches wherein the network is a virtual-circuit mesh data network that transmits packetized data (**paragraph [0001]**).

As per claims 4 and 5, Huang wherein the network data structure is distributed over the network such that at least one node in the network does not have all of the information in the

Art Unit: 2444

network data structure and wherein each of the nodes in the network has all of the information in the network data structure (**paragraph [0046] and [0047]**).

As per claim 6, Huang teaches a method further comprising, in response to the new service request, determining a restoration path for the new service in the network using the network data structure (**paragraphs [0045]**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 7-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Kodialam et al. (**U.S. Patent No. 6, 996,065 B2**)

As per claim 7, Huang discloses the invention substantially as claimed. Huang teaches wherein each data structure in the array corresponds to a different link in the network; each vector in the array has a plurality of entries corresponding to the nodes and links in the network (**paragraph [0040]**); for a first data structure corresponding to a first link (**paragraphs [0030], [0036], [0041] and [0043]**), each entry in the first vector corresponding to a node or link identifies the minimum amount of protection bandwidth required to be reserved on the first link

Art Unit: 2444

to restore service upon failure of the node or other link ((**paragraphs [0030], [0036], [0041] and [0043]**)); and the service data structure is a primary path vector having a plurality of entries corresponding to the nodes and links in the network, wherein each entry of the primary path vectors identifies whether the corresponding node or link is part of the primary path for the new service (**paragraphs [0030], [0036], [0041] and [0043]**).

However, Huang does not explicitly teach wherein the data structure is an array of vectors.

Kodialam teaches wherein the data structure is an array of vectors (**col. 11, lines 63-67 and col. 13, lines 30-37**).

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporate Huang's teachings to the teachings of Kodialam, for the purpose of providing tracking and structure of data regarding bandwidth-link-node relationships (**col. 11, lines 63-67**).

As per claim 8, Huang-Kodialam teaches wherein determining whether the new service requires any additional protection bandwidth to be reserved on a link A in the network comprises applying a vector addition operation between the primary path vector corresponding to the new service request and the vector of the array corresponding to the link A to form a result vector, and comparing the maximum value in the result vector with the bandwidth already reserved on the link A to determine whether any additional protection bandwidth is required for the new service (**Kodialam: col. 4, lines 13-18**).

As per claim 9, Huang-Kodialam teaches wherein the additional protection bandwidth is required and is reserved if any result vector entry is greater than the bandwidth already reserved on the link (**Kodialam: col. 14, lines 1-10**).

As per claim 10, Huang-Kodialam teaches wherein the vector addition operation is applied between the primary path vector and each vector in the array corresponding to each different link in a restoration path for the new service (**Kodialam: col. 4, lines 13-18**).

As per claim 11, Huang-Kodialam teaches wherein the service data structure is primary path node-link vector $V_{sub.pnl}$ (**Kodialam: col. 5 and 6, tables 1 and 2**).

As per claim 12, Huang-Kodialam teaches wherein an incremental version of the network data structure is used for transmitting sharing information in order to reduce the amount of data that is transmitted in the network to disseminate the information (**Kodialam: col. 8, lines 59-63**).

As per claim 13-15, Huang-Kodialam teaches wherein transmission control protocol/Internet protocol (TCP/IP) connections are used for the dissemination (**Kodialam: col. 2, lines 1-5**); wherein the compact representation is a node aggregate vector $V_{sub.na}$ wherein each element of $V_{sub.na}$ corresponds to a node in the network wherein the element's value is a function of the maximum of reservation bandwidths reserved on all links incident to the node and wherein the dissemination is accomplished using a link-state routing protocol (**Kodialam: col. 1, lines 55-59**).

As per claim 16, Huang-Kodialam teaches wherein a compact version of the network data structure is used to reduce the amount of data that needs to be transmitted in the network to disseminate the information about each link (**Kodialam: col. 8, lines 59-63**).

As per claims 17-19, claims 17-19 lists substantially the same elements as claim 1 and is thus rejected using the same rationale.

As per claim 20, claim 20 is substantially the same as claim 12 and thus rejected using similar rationale.

As per claim 21-23, claims 21-23 are substantially the same as claim 7 and therefore rejected using similar rationale.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joiya Cloud whose telephone number is 571-270-1146. The examiner can normally be reached Monday to Friday from on 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3922.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access

Art Unit: 2444

to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197
(toll-free).

JMC

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444

February 2, 2009